

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/JP2005/011205

International filing date (day/month/year)
14.06.2005

Priority date (day/month/year)
08.07.2004

International Patent Classification (IPC) or both national classification and IPC
F04B39/02, F04B39/00, F04B39/12

Applicant
MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/JP2005/011205

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material:
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing:
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

Box No. II Priority

1. ☒ The validity of the priority claim has not been considered because the International Searching Authority does not have in its possession a copy of the earlier application whose priority has been claimed or, where required, a translation of that earlier application. This opinion has nevertheless been established on the assumption that the relevant date (Rules 43*bis*.1 and 64.1) is the claimed priority date.
2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/JP2005/011205

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	7-9
	No: Claims	1-6
Inventive step (IS)	Yes: Claims	7-9
	No: Claims	1-6
Industrial applicability (IA)	Yes: Claims	1-9
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Cited Documents

1. The following documents indicated in the international search report are referred to in this international preliminary examination report:

D1 : US-A-4 488 853 (BENSON ET AL) 18 December 1984 (1984-12-18)

D2 : PATENT ABSTRACTS OF JAPAN vol. 2000, no. 08, 6 October 2000 (2000-10-06) & JP 2000 145637 A (MATSUSHITA REFRIG CO LTD), 26 May 2000 (2000-05-26)

Re Item V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

2. As far as claim 1 can be understood (see item VIII below), the following comments about the claims can be made:

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.

The document **D1** discloses a compressor comprising a motor element and a compression element driven by the motor element, both elements being disposed in a housing which stores oil, the compression element comprising a crankshaft 9 having a main shaft and an eccentric shaft coupled with the main shaft, a cylinder block 1 which supports the main shaft so that the shaft can revolve freely, and provided with a cylinder bore forming a compression chamber, a piston (stepped piston 3) which reciprocates in the cylinder bore, and a connection structure 8 which connects the piston with the eccentric shaft; wherein an area of a sliding-contact surface formed on the piston 3 in the cylinder bore at a compression load side (area around 3) is greater than that at an anti-compression load side (area around 4) (cf. Figures).

Thus, the subject-matter of claim 1 is not novel (Article 33(2) PCT).

3. Document D2, which is considered to represent the most relevant state of the art, discloses a compressor from which the subject-matter of claim 7 differs in that a piston is provided whereby a side of the circumferential surface of the piston with respect to a reference plane has a smaller sliding surface than the sliding surface located on the opposite side.

The technical problem solved by these distinguishing features could be determined as to prevent wear caused by unsymmetrical force contact between the piston and the cylinder.

The solution as defined by the combination of features in claim 1 appears to be not known from document D2 or from any of the documents cited in the international search report and does not appear to be rendered obvious by any of these documents alone or in combination, and is not considered a matter of normal design procedure.

The subject-matter of claim 7 is therefore new (Article 33(2) PCT).

4. Claims 8 and 9 are dependent on claim 7 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

Re Item VII

Certain defects in the international application

5. a) The Independent claims are not in the two-part form in accordance with Rule 6.3(b) PCT with those features known in combination from the prior art D2 being placed in the preamble (Rule 6.3(b)(i) PCT) and with the remaining features being included in the characterising part (Rule 6.3(b)(ii) PCT).

b) The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

Re Item VIII

Certain observations on the international application

6. The expression "...a compression load side....an anti-compression load side." used in claim 1 is unclear, because it is not clearly defined as to what the "compression load" refers to i.e. such a statement could be interpreted to mean the "compression load side" -on top of the piston and the "anti-compression load side"- underneath the piston. The statement is further clarified in the description on page 6, lines 7-9, "...The circumferential surface at the compression load side is pressed stronger against the cylinder bore wall..." therefore the incorporation of this wording into claim 1 would render the the claim new and inventive. i.e. "...a compression load side at which the circumferential surface is pressed stronger against the cylinder bore wall..."(Article 6 PCT).
7. Although claims 1 and 7 have been drafted as separate independent claims, they appear to relate effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought and in respect of the terminology used for the features of that subject-matter. The aforementioned claims therefore lack conciseness and as such do not meet the requirements of Article 6 PCT.